CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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Hungarian Ferro-Alloy Factory

1. The Hungarian Ferro-Alloy Factory (Magyar Vasoetvoezet Gyar) was under the control of the Iron Metallurgy Division of the Foundries and Machine Industries Ministry. The factory produced three grades of ferrosilicon: 45%, 70%, and 90%. Ferrosilicon is an indispensable basic material in steel production, and even though the Hungarian Ferro-Alloy Factory was small, its role in the production of steel in Hungary was of decisive importance.

2. The Hungarian Ferro-Alloy Factory, constructed before World War II, was located alongside a secondary highway near the Czech border three kilometers outside of the town of Zagyvarona [4807N-1951E], and about six kilometers north of Salgotarján [4807N-1948E], with which it was connected by a narrow-gauge railroad. Living quarters for factory officials and workers were situated across the secondary highway from the factory. Behind the living quarters was an artificial lake which served as a water reservoir for an electric power plant located one to five kilometers from the lake.

3. The factory proper occupied an area 120 x 70 m. It was built into the side of a hill and was barely visible from the air. The factory grounds were fenced in, with an entrance leading through a small porter's lodge. At the northern end of the factory grounds, above ground, were located an office building 10 x 20 m. and a storage building.

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4. The personnel of the factory consisted of about 20 officials and clerks, and 100 male and female workers who worked in three shifts.

Production Problems

5. Until February 1952, the factory operated with a single electric furnace. Its production covered 30% of the steel industry's need for ferrosilicon. The remaining 70% of ferrosilicon needed by the steel industry was procured through import from abroad.

6. When the embargo stopped shipments of strategic materials to Iron Curtain countries in the Fall of 1951, the import of ferrosilicon stopped and the Hungarian steel industry was faced with a serious problem. The country's rather large reserve stock had to be tapped. The State Planning Office (Orszagos Terv Hivatal) immediately took steps to relieve the situation. It ordered the construction of another electric furnace at the Ferro-Alloy Factory. The second electric furnace was completed in March 1952. It was expected that the two furnaces would increase the production of ferrosilicon to 60 or 65% of the country's needs, and the 35 or 40% lacking would be drawn from the reserve stock. The State Planning Office also began to look for supplies from the Peoples' Democracies, but without success.

7. The shortage of ferrosilicon was emphasized in another way. Although the production of ferrosilicon would be increased by the construction of a second electric furnace, the steel industry's need for ferrosilicon had also increased as a result of the increased production of pig iron by the 700 cu. cm. blast furnace which started production on 1 May 1951 in Diosgyoer. This meant more tapping of the reserve stock. Fortunately for the steel industry, even with this additional demand, the reserve stock was large enough to assure an uninterrupted supply of ferrosilicon through 1952.

8. In line with its plans to eliminate the problem of the ferrosilicon shortage, the State Planning Office relieved Engineer (fnu) KOVACS of his duties as the chief of the Ferro-Alloy Factory in March 1952 and entrusted him with the task of directing construction of electric furnaces at the Factory. The instructions of the State Planning Office were to construct a third electric furnace by November 1952, and a fourth by May 1953. To carry out this assignment he was given a special department in the Iron Metallurgy Planning Institute (Vaskohaszati Tervezoe Intezet).

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Operation of the Furnaces

9. The two electric furnaces in existence [redacted] were housed in a tall building covered on the top and side with corrugated iron sheet, occupying a space approximately 30 x 40 m. As the additional furnaces were constructed the building was to be extended.

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10. The electric furnaces were built in a row on the same order as Martin furnaces, but operated differently. They were cylindrical, eight meters in diameter and ten meters high. While Martin furnaces operated at a temperature of 1,300-1,600 degrees Celsius, the electric furnaces operated at 2,400-3,000 degrees Celsius. For this reason it was not sufficient to have the furnace walls lined with refractory bricks; the electric furnaces had to be lined with thick graphite layers.

11. The electric furnaces were fed from a platform six meters high with ore containing ferrosilicon, to which was added a fixed ratio of charcoal. The ore was obtained from regions in West Hungary (Transdanubia). The part of the furnace at platform level was open, and workers were protected from heat by a curtain-like chain screen suspended from the roof as they shoveled the necessary materials into the glowing boilers.

12. On top of the furnaces were three built-in carbon electrodes. The operation of the carbon electrodes was regulated by means of modern electrical instruments from a separate place on the platform. The carbon electrodes were about three meters long, 60 or 80 cm. in diameter, and each weighed 800 to 1,000 kg. Because of the high temperature, the electrodes became worn out in six or eight weeks and had to be replaced.

13. No carbon electrodes were produced in Hungary. They were imported from Poland. At the beginning of 1952 Metalimpex, a state export-import bureau, was able to obtain only 10% of the carbon electrodes ordered for the first half of 1952. Because of this the State Planning Office was forced to allow the use of six electrodes from
25X1 the war stockpile to fill the needs of the factory until the next shipment, which was to arrive from Poland in July 1952. [redacted]
25X1 the total stock of carbon electrodes in Hungary [redacted] about 40 pieces.

Production Method

14. The ore was kept in the open in the factory yard, where it was broken into small pieces. The ferrosilicon tapped from the electric furnaces was conducted through tubs lined with graphite layers, where it was cooled to 300 degrees Celsius. When the ferrosilicon contracted as a result of reduced heat, the workers took it out easily. After they had taken it out they broke it into pieces weighing 10 to 40 dekagrams. Ferrosilicon has a low specific gravity which increases in inverse proportion to the content of pure ferrosilicon, and therefore the weight of the finished product varied with the content of pure ferrosilicon.

Production Capacity

15. Production capacity of one electric furnace was 2,400 kg. per 24 hours. The two electric furnaces in existence in March 1952 produced 4,800 kg. of ferrosilicon per day, or 1752 metric tons per year. Taking into consideration the third furnace, which was supposed to have been completed by November 1952, the total production per year would be 2628 metric tons. The state plan for 1953 provided for production of 2,200,000 tn. of steel in Hungary. For that quantity of steel at least 5,000 tn. of ferrosilicon would be needed. Thus it can be seen that even with four or five electric furnaces, the needs for ferrosilicon would not be met.

Consumers of Ferrosilicon

16. The largest consumers of ferrosilicon in Hungary were the MAVAG Metallurgical Works, the Ozd Metallurgical Works, and the Rakosi Matyas Works. It was expected that the Sztalinvaros Iron Works (Sztalinvaros Vasmuevek) would begin using ferrosilicon in 1953. Of non-metallurgical works, the Hungarian Freight Car and Machine Factory (Magyar Vagon es Gepgyar), Budapest, and the DIMAVAG Machine Factory (DIMAVAG Gepgyar) were also users of ferrosilicon.